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EXAMINER	
HUANG, WEN WU	

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2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	**Application No.**	**Applicant(s)**	
	10/502,502	LU ET AL.	
	Examiner	**Art Unit**	
	Wen W. Huang	2618	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 19 July 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: 3-20.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment .
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

ADVISORY ACTION

Claims 3-20 are pending.

Claims 1, 2 and 21 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (US PUB NO. 2003/0087653 A1; hereinafter "Leung 653) in view of Nakagawa et al. (US. 6256,508 B1; hereinafter "Nakagawa") and Leung (US PUB NO. 2003/0078044 A1; hereinafter "Leung 044")

Regarding **claim 3**, Leung 653 teaches a method for providing a real-time broadcast service in a mobile communication system (see para. [0038] and [0039]), the mobile communication system comprising a radio access network (see fig. 5, para. [0069]) and a plurality of mobile terminals (see fig. 1, component 106), wherein the radio access network has an original service hierarchy (see para. [0039]); the method comprising:

linking the real-time broadcast service (content server) to the radio access network (see fig. 5, components 326, 324 and 320; para. [0070], lines 4-5); and

adding a broadcast service hierarchy into the radio access network (see para. [0036], lines 3-7; introducing broadcast service), assigning downlink special broadcast resources for the broadcast service hierarchy (see para. [0048], lines 2-5 and para. [0049], lines 7-11; assigning downlink resource for broadcast), and broadcasting the real-time broadcast service to the mobile terminals through the downlink special broadcast resources (see para. [0049] and para. [0060], lines 4-6), wherein the downlink special broadcast resources are downlink special carrier frequencies (see Leung 653, para. [0048]; HSBS frequency assignment), and

any of the mobile terminals (see Leung 653, fig. 1, component 106; para. [0060], lines 4-6; interested mobiles) communicating with radio access network using uplink and/or downlink resources of the original service hierarchy (see para. [0069], lines 3-5), receiving the real-time broadcast service using the downlink special broadcast resource (see para. [0035], lines 15-23), and switching between the original service hierarchy and the broadcast service hierarchy (see para. [0035], lines 18-20; "tune in" to the broadcast service hierarchy); and

when switching to the broadcast service hierarchy (see Leung 653, para. [0060], lines 4-6; interested mobiles), the mobile terminal staying in a cell of the broadcast service hierarchy (see Leung 653, para. [0043], lines 1-2) and monitoring paging procedure of the cell in the broadcast service hierarchy (see Leung 653, para. [0107], lines 10-11).

Leung 653 is silent to teaching that comprising:

the broadcast service hierarchy are divided into cells, the adjacent cells employ different scrambling codes, and multiple cells are defined into a location area;

when switching to the broadcast service hierarchy, the mobile terminal controlling handoff of the cell. However, the claimed limitation is well known in the art as evidenced by Nakagawa and Leung 044.

In the same field of endeavor, Nakagawa teaches a method wherein

the broadcast service hierarchy are divided into cells (see Nakagawa, fig. 1, components A-G), the adjacent cells employ different scrambling codes (see Nakagawa, fig. 4; "ss method for local area broadcasting"; col. 6, lines 20-22), and multiple cells are defined into a location area (see Nakagawa, fig. 4, "wide area broadcasting").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Leung 653 and the teaching of Nakagawa in order to avoid RF interference (see Nakagawa, col. 2, lines 23-25).

The combination of Leung 653 and Nakagawa is silent to teaching that, when switching to the broadcast service hierarchy, the mobile terminal controlling handoff of the cell. However, the claimed limitation is well known in the art as evidenced by Leung 044.

In the same field of endeavor, Leung 044 teaches a method comprising under the broadcast service hierarchy mode, the mobile terminal solely controlling handoff of the cell (see Leung 044, para. [0057], lines 1-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Leung 653 and Nakagawa with the teaching of Leung 044 in order to implement handoff in a broadcasting system (see Leung 044, para. [0011]).

Regarding **claim 4**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, further comprising:

setting a broadcast channel for broadcasting corresponding cell information (see Leung 653, para. 0053) and paging channel for a paging mobile terminals in the cell of broadcast service hierarchy (see Leung 044, para. [0057], lines 1-10).

Regarding **claim 5**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 4, wherein said cell information includes location area code and paging channel configuration information of the cell in the broadcast service hierarchy, and carrier frequencies, scrambling codes (see Leung 653, para. [0051], lines 12-15 and 19-25), Random Access Channel (RACH), an AICH public channel relating to RACH and Forward Access Channel (FACH) of the adjacent cells in the original service hierarchy (see Leung 653, para. [0053]).

Regarding **claim 6**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, wherein the scrambling codes in the broadcast service hierarchy and those in the original service hierarchy are either the

same or different; the cells of the broadcast service hierarchy and those of the original service hierarchy are either superposed or not (see Nakagawa, fig. 1 and fig. 4).

Regarding **claim 7**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, wherein

the handoff includes location update (see Leung 653, para. [0107], lines 5-6) which is triggered when the mobile terminal switches between the broadcast service hierarchy and the original service hierarchy (see Leung 653, para. [0107], lines 10-11), and when the location area of the mobile terminal changes in the broadcast service hierarchy (see Leung 653, para. [0107], lines 3-4).

Regarding **claim 8**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 7, wherein the process of triggering location update when the location area changes in the broadcast service hierarchy comprising:

the mobile terminal obtaining information of cells in the original service hierarchy from the broadcast channel of the broadcast service hierarchy, the cells in the original service hierarchy are adjacent to the current cell of the broadcast service hierarchy (see Leung 653, para. [0043], lines 9-14), finding a cell in the original service hierarchy where the mobile terminal can stay, and sending a random access request utilizing the Random Access Channel (RACH) in the cell of the original service hierarchy (see Leung 044, para. [0057], lines 1-10); after receiving AICH information from the cell of the original service hierarchy, the mobile terminal tuning the receiving frequency to the

downlink carrier frequency, starting search and synchronization for the current cell of the broadcast service hierarchy (see Leung 044, para. [0058]), meanwhile sending a message containing location update information to the radio access network utilizing the uplink carrier frequency of the original service hierarchy, and waiting to receive a location update confirming message at the current cell of the broadcast service hierarchy (see Leung 044, para. [0054]).

Regarding **claim 9**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, wherein the process of monitoring paging in the broadcast service hierarchy mode comprising:

the radio access network selecting a cell in a corresponding location area according to the received location information of the mobile terminal, and sending downlink paging information according to the carrier frequency of the broadcast service hierarchy or the carrier frequency of the original service hierarchy (see Leung 653, para. [0107], lines 10-13).

Regarding **claim 10**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, further comprising:

after switching from the broadcast service hierarchy to the original service hierarchy, the mobile terminal making a reply or initiating a call in the original service hierarchy (see Leung 653, para. [0107], lines 10-13).

Regarding **claim 11**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 10, wherein the process of making a reply or initiating a call further comprising:

sending information of the adjacent cells in the original service hierarchy utilizing the broadcast channel of the broadcast service hierarchy (see Leung 653, para. [0108]).

Regarding **claim 12**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, wherein

the mobile terminal shares a set of receiving system and synchronizing system with other mobile terminals in the broadcast service hierarchy and the original service hierarchy (see Leung 653, para. [0053]).

Regarding **claim 13**, the combination of Leung 653, Nakagawa and Leung 044 also teaches the method according to claim 3, wherein

the mobile terminal utilizes a different receiving system, and shares a set of synchronizing system with other mobile terminals in the broadcast service hierarchy and the original service hierarchy (see Leung 653, para. [0053]).

2. Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung 653 (and US. 5,101,501 incorporated by Leung 653) as applied to claim 1 above, and further in view of Nakagawa.

Regarding **claim 14**, Leung 653 teaches a method for providing a real-time broadcast service in a mobile communication system (see para. [0038] and [0039]), the mobile communication system comprising a radio access network (see fig. 5, para. [0069]) and a plurality of mobile terminals (see fig. 1, component 106), wherein the radio access network has an original service hierarchy (see para. [0039]); the method comprising:

linking the real-time broadcast service (content server) to the radio access network (see fig. 5, components 326, 324 and 320; para. [0070], lines 4-5); and

adding a broadcast service hierarchy into the radio access network (see para. [0036], lines 3-7; introducing broadcast service), assigning downlink special broadcast resources for the broadcast service hierarchy (see para. [0048], lines 2-5 and para. [0049], lines 7-11; assigning downlink resource for broadcast), and broadcasting the real-time broadcast service to the mobile terminals through the downlink special broadcast resources (see para. [0049] and para. [0060], lines 4-6), wherein the downlink special broadcast resources are downlink special scrambling codes (see Leung 653, para. [0049], line 7-11; a given Walsh code);

superposing the locations of cells of the broadcast service hierarchy over those of the original service hierarchy so as to form the structure of the cell of the original service hierarchy plus the cell of the broadcast service hierarchy (see Leung 653, fig. 1),

any of the mobile terminals (see Leung 653, fig. 1, component 106; para. [0060], lines 4-6; interested mobiles) communicating with radio access network using uplink and/or downlink resources of the original service hierarchy (see para. [0069], lines 3-5),

receiving the real-time broadcast service using the downlink special broadcast resource (see para. [0035], lines 15-23), and switching between the original service hierarchy and the broadcast service hierarchy (see para. [0035], lines 18-20; "tune in" to the broadcast service hierarchy); and

the working mode of mobile terminal keeps unchanged for the original service, pilot channel of the original cell is shared and real-time broadcast service is supported under both idling mode and connecting mode (see Leung 653, para. [0053]).

Leung 653 is silent to teaching that comprising:

wherein the cells utilize the same downlink special scrambling code and a same special broadcast channel code for transmitting real-time broadcast information. However, the claimed limitation is well known in the art as evidenced by Nakagawa.

In the same field of endeavor, Nakagawa teaches a method wherein the cells utilize the same downlink special scrambling code and a same special broadcast channel code for transmitting real-time broadcast information (see Nakagawa, fig. 4, col. 6, lines 10-15, "wide area broadcasting");

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Leung 653 and the teaching of Nakagawa in order to avoid RF interference (see Nakagawa, col. 2, lines 23-25).

Regarding **claim 15**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 14, wherein the process of assigning downlink special scrambling codes in the broadcast service hierarchy comprising adding a scrambling

operation using the downlink special scrambling codes in the base station sender of each cell in the original service hierarchy (see Leung 653, para. [0055]), wherein the information of the broadcast service hierarchy and that of the original service hierarchy either share the same power amplifier or utilizes respective power amplifiers (see Leung 653, para. [0053] and Nakagawa fig. 14A, component 143).

Regarding **claim 16**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 15, wherein process of the sender includes performing modulation and spectrum spreading for the original service and real-time broadcast service (see Nakagawa fig. 14A, component 143); the modulation and spectrum spreading for the original service includes source encoding, channel encoding, Quaternary Phrase-Shift Keying (QPSK), spectrum spreading and scrambling the spectrum spread results utilizing the down-link scrambling codes of each cell for the original service (see Leung 653, para. [0040]); the modulation and spectrum spreading for the real-time broadcast service includes source encoding, channel encoding, QPSK, spectrum spreading and scrambling the spectrum spread results utilizing the down-link special scrambling codes for the real-time broadcast service (see Leung 653, para. [0053]).

Regarding **claim 17**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 14, wherein the demodulation unit of RAKE receiver of the mobile terminal adopts downlink special scrambling codes for specially receiving the

real-time broadcast service; channel decoding and source decoding is implemented respectively for the original service and real-time broadcast service after the signals pass the RAKE receiver; the channel code of RAKE receiver is the special broadcast channel code, namely the downlink special scrambling code (see Leung 653, para. [0043], lines 9-13; and see U.S. Pat. No. 5,101,501 incorporated by Leung 653; fig. 2, components 40 and 42).

Regarding **claim 18**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 14, wherein said structure of the cell of the original service hierarchy plus the cell of the broadcast service hierarchy is that range and location division of the cell of the original service hierarchy plus the broadcast service hierarchy is the same as that of the original service macro cell coving hierarchy in which the mobile network is covered by the macro cells (see Leung 653, fig. 1).

Regarding **claim 19**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 14, wherein the mobile terminal supports real-time broadcast service under both idle mode and connecting mode (see Leung 653, para. [0110]), the method further comprising:

keeping the mobile terminal under idle mode for the original service when the mobile terminal switches to the broadcast service hierarchy (see Leung 653, para. [0110]);

when the mobile terminal is located in a macro cell, according to the channel estimation result for the public pilot frequency of this cell and the channel estimation result for the public pilot frequency of one or multiple adjacent cells with powerful signals, merging the received signals of multi cells and demodulating the signals on special broadcast channel (see Leung 653, para. [0043]);

the mobile terminal selecting and reselecting cells, implementing location update and receiving paging information in terms of the process of original service (see Leung 653, para. [0107]);

when the mobile terminal is located in a micro cell or a pico cell, according to the channel estimation result for the public pilot frequency of one or multiple adjacent cells with powerful signals, merging the received signals of multi cells and demodulating the signals on special broadcast channel (see Leung 653, para. [0043], lines 9-13);

the mobile terminal selecting and reselecting cells, implementing location update and receiving paging information in terms of the process of original service (see Leung 653, para. [0107] and para. [0040]).

Regarding **claim 20**, the combination of Leung 653 and Nakagawa also teaches the method according to claim 14, further comprising:

the mobile terminal evaluating the interference value to a service channel caused by the downlink special scrambling codes according to the demodulated special broadcast channel data and the information of channel transmission condition, scrambling code and channel code, and subtracting this interference value from the

received signal (see Leung 653, para. [0043]; and see U.S. Pat. No. 5,101,501 incorporated by Leung 653; fig. 2, component 48).

Response to Arguments

Applicant's arguments filed 7/19/07 have been fully considered but they are not persuasive.

Regarding claim 3, the Applicant argues that claim 3 of the instant application requires that the downlink special carrier frequencies are peculiar or particular to the real-time broadcast service, and are not used for bearing original service. However, the Examiner submits that nowhere in claim 3 recites or teaches that the downlink special carrier frequencies are not used by the original service.

Regarding claim 3, the Applicant argues that claim 3 of the instant application requires that all the cells of the broadcast service hierarchy employ a same downlink special carrier frequency. However, the Examiner submits that nowhere in claim 3 recites or teaches that all the cells of the broadcast service hierarchy employ a same downlink special carrier frequency.

Also regarding claim 3, the Applicant argues that claim 3 requires that the same content of the real-time broadcast services are transmitted in each cell of the broadcast service hierarchy, and adjacent cells of the broadcast service hierarchy employ different

scrambling codes. However, the Examiner submits that nowhere in claim 3 recites or teaches that the same content of the real-time broadcast services are transmitted in each cell of the broadcast service hierarch.

Claim 3, however, does require adjacent cells of the broadcast service hierarchy employing different scrambling codes. Though, the Examiner submits that Nakagawa teaches that adjacent cells of the broadcast service hierarchy employing different scrambling codes (see Nakagawa, fig. 9).

Also regarding claim 3, the Applicant argues that the soft handoff of Leung 653 does not teach or suggest the switching of claim 3.

However, The Examiner submits that in the Final Office Action dated 4/19/07, the Examiner recited Leung 653, para. [0035], lines 18-20, "tune in to the broadcast service", as the ground of rejection for "switching between the original service hierarchy and the broadcast service hierarchy". More specifically, Leung 653, para. [0035], lines 18-20, teaches that subscribers to the broadcast service "tune in" (i.e. switch) to a designated channel to access the broadcast transmission. Therefore, the Examiner submits that Leung 653 teaches suggest the switching of claim 3.

Regarding claim 14, the Applicant argues that scrambling code and Walsh code are totally different. However, the Examiner respectfully disagrees.

More specifically, the Examiner submits that Walsh code is a kind of scrambling code. In order to support the Examiner's interpretation, the Examiner refers to CDMA

IS-95 published by McGraw-Hill Telelcommunications. CDMA IS-95 (page 48, lines 1-3) teaches that orthogonal codes (a.k.a. Walsh code) are spreading codes.

Also regarding claim 14, the Applicant argues that Nakagawa does note teach or suggest using different scrambling codes to distinguish the broadcast service from the original service in the same carrier frequency. Examiner submits that nowhere in claim 3 recites or teaches using different scrambling codes to distinguish the broadcast service from the original service in the same carrier frequency.

Regarding to claims 3 and 14, in response to Applicant's argument that Leung 653 fails to anticipate, teach or suggest "adding a broadcast service hierarchy into the radio access network in order to provide a real-time broadcast service in a mobile communication system", the Examiner respectfully disagree.

More specifically, the Examiner submits that Leung 653 is directed to enable a large number of mobile terminals to receive broadcast service (see Leung 653, para. [0034]). Thus, Leung 653 is directed to provide a real-time broadcast service in a mobile communication system. Furthermore, the Examiner submits that nowhere in claim 3 suggests or teaches that the hierarchy includes frequency allocation, cell division, and frequency and scrambling codes assignments.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen W. Huang whose telephone number is (571) 272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

wwh

7/26/07

MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER